

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
2 December 2004 (02.12.2004)

PCT

(10) International Publication Number
WO 2004/104553 A3

(51) International Patent Classification⁷: **B01L 11/00**

(21) International Application Number:
PCT/US2004/015654

(22) International Filing Date: 19 May 2004 (19.05.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/471,352 19 May 2003 (19.05.2003) US

(71) Applicant (for all designated States except US): **HARVEST TECHNOLOGIES CORPORATION** [US/US];
40 Grissom Road, Suite 100, Plymouth, MA 02360 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ELLSWORTH, James, R.** [US/US]; c/o Harvest Technologies Corporation, 40 Grissom Road, Suite 100, Plymouth, MA 02360 (US). **MCGOVERN, Paul** [US/US]; c/o Harvest

Technologies Corporation, 40 Grissom Road, Suite 100, Plymouth, MA 02360 (US). **KIBBE, Mark** [US/US]; c/o Harvest Technologies Corporation, 40 Grissom Road, Suite 100, Plymouth, MA 02360 (US).

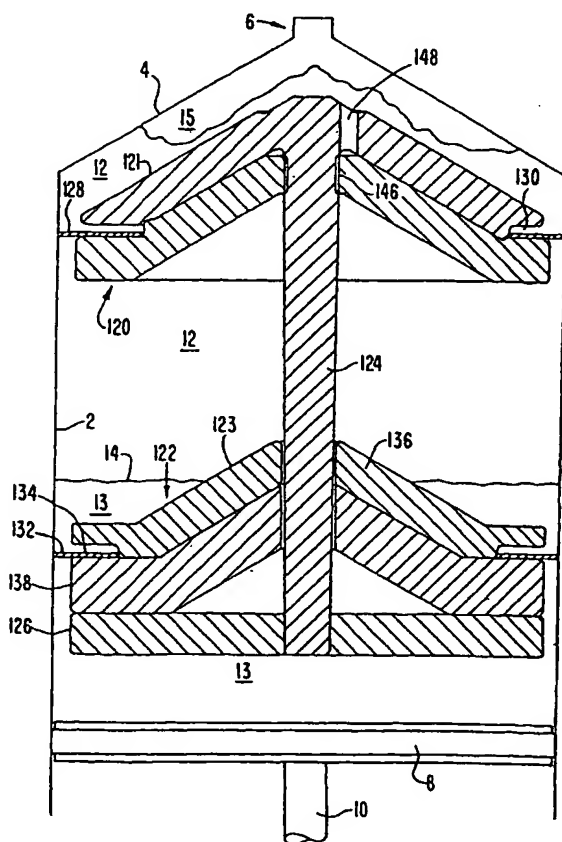
(74) Agent: **CLARK, Conrad, J.**; Clark & Brody, 1750 K Street, N.W., Suite 600, Washington, DC 20006 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH,

[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR SEPARATING FLUID COMPONENTS



(57) Abstract: A floating element for separating components (12, 13, 14) of a physiological fluid comprises two parts (120, 122) that are relatively movable. The two parts (120, 122) define a prescribed volume between them when at their maximum separation, and one of the parts (122) may be moved toward the other (120) to express the fluid contained in the volume between the parts (120, 122). The parts are made of materials having densities so that they assume a desired position in the fluid to allow selected components to be easily obtained and expressed.



GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(88) Date of publication of the international search report:
10 March 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— with international search report

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/15654

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : B01L 11/00

US CL : 422/100, 101; 210/359; 494/38, 41

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 422/100, 101; 210/359; 494/38, 41

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X — Y	US 5,456,885 A (COLEMEN et al) 10 October 1995 (10.10.1995) See from line 53 of col. 3 to line 25 of col. 6.	4-7 ----- 8
X — Y	US 5,707,876 A (LEVINE) 13 January 1998 (13.01.1998). See from line 12 of col. 3 to line 39 of col. 4.	1 ----- 8
X	US 4,152,270 A (CORNELL) 01 May 1979 (01.05.1979) See from line 44 of col. 2 to line 29 of col. 6.	4-6

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

12 November 2004 (12.11.2004)

Date of mailing of the international search report

06 DEC 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US

Commissioner for Patents

P.O. Box 1450

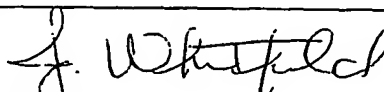
Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

Matthew O Savage

Telephone No. (571) 272-1101


 For